

**Silver Creek Watershed
TMDL Load Reduction Alternatives
Assessment and Analysis
Phase I Soil Sampling
Preliminary XRF Results**

Transect 1

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West		East
			U 5+00	F 1+25	F 1+25
				WL 2.3	WL 2.3
Shallow	0.5	Pb	404	3,389	
		As	37	144	
		Zn	547	4,812	
		Cd	< LOD	< LOD	
	1	Pb			22,994
		As			623
		Zn			29,583
		Cd			< LOD
Mid depth	5.5	Pb			152
		As			31
		Zn			2,477
		Cd			61
Deep	8	Pb		11,087	183
		As		438	46
		Zn		16,124	338
		Cd		< LOD	< LOD
	12	Pb		37	
		As		< LOD	
		Zn		178	
		Cd		< LOD	

(1) Sample depth indicated is the bottom of the interval from which the sample was collected. The length of the interval sampled varies from 0.5 to 2 feet.

(2) Water Levels (WL) in piezometers is the depth to water in feet below ground surface

(3) All results are presented in mg/kg (ppm).

(4) XRF readings above approximately 10,000 ppm should be considered approximate.

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Transect 2

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West				East		
			U 11+25	U 6+25	F 3+75	F 1+25	F 1+25	U 6+25	U 11+25
					WL DRY	WL 4.5	WL 7.5	WL 6.9	
Shallow	0.5	Pb	132	101					114
		As	< LOD	< LOD					< LOD
		Zn	254	186					267
		Cd	< LOD	< LOD					< LOD
	1	Pb				25,044	16,346		
		As				1,477	623		
		Zn				35,486	17,808		
		Cd				< LOD	< LOD		
	1.5	Pb			77			2,240	
		As			16			< LOD	
		Zn			228			2,889	
		Cd			< LOD			< LOD	
Mid depth	2.5	Pb				152			
		As				< LOD			
		Zn				323			
		Cd				< LOD			
	6	Pb			29		96	78	
		As			< LOD		< LOD	< LOD	
		Zn			153		243	271	
		Cd			< LOD		< LOD	< LOD	
Deep	8	Pb				55			
		As				< LOD			
		Zn				183			
		Cd				< LOD			
	9.5	Pb						208	
		As						< LOD	
		Zn						388	
		Cd						< LOD	
	10	Pb			34				
		As			< LOD				
		Zn			131				
		Cd			< LOD				
	11.5	Pb					168		
		As					32		
		Zn					371		
		Cd					< LOD		
	12	Pb				40			
		As				< LOD			
		Zn				162			
		Cd				< LOD			
	14	Pb						73	
		As						< LOD	
		Zn						142	
		Cd						< LOD	

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Transect 3

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West						East							
			U 16+25	U 11+25	F 8+75	F 6+25	F 3+75	F 1+25	F 1+25	F 3+75	U 6+25	F 8+75	U 11+25	F 13+75	U 17+50	
								WL DRY		WL 3.7		WL DRY		WL 5.0		
Shallow	0.5	Pb	77	116	79	3,791		15,411			851		338		577	64
		As	< LOD	< LOD	< LOD	133		1,428			48		< LOD		< LOD	< LOD
		Zn	196	201	203	10,163		9,204			841		562		861	217
		Cd	< LOD	< LOD	< LOD	< LOD		< LOD			< LOD		< LOD		< LOD	< LOD
	1	Pb								8,849		106				
		As								234		25				
		Zn								9,991		224				
		Cd								< LOD		< LOD				
	1.5	Pb													124	
		As													< LOD	
		Zn													371	
		Cd													< LOD	
Mid depth	2	Pb						16,064								
		As						807								
		Zn						27,895								
		Cd						72								
	5.5	Pb							108							
		As							< LOD							
		Zn							272							
		Cd							< LOD							
	7	Pb								208					29	
		As								< LOD					17	
		Zn								289					150	
		Cd								< LOD					< LOD	
Deep	8	Pb									35					
		As									16					
		Zn									146					
		Cd									< LOD					
	10	Pb						42		33		36		24		
		As						< LOD		< LOD		< LOD		< LOD		
		Zn						166		130		122		133		
		Cd						< LOD		< LOD		< LOD		< LOD		

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Transect 4

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West				East						
			U 13+75	F 8+75	U 3+75	U 1+25	F 1+25	F 3+75	F 8+75	F 11+25	U 13+75	F 16+25	U 18+75
								WL 3.8	WL 3.1		WL DRY		
Shallow	0.5	Pb	1,229	128	54		21,035			809		111	88
		As	< LOD	< LOD	< LOD		1,083			79		< LOD	< LOD
		Zn	915	362	179		48,248			2,092		342	203
		Cd	< LOD	< LOD	< LOD		135			< LOD		< LOD	< LOD
	1	Pb				517		24,488				143	
		As				37		1,523			< LOD		
		Zn				1,626		50,480			275		
		Cd				< LOD		123			< LOD		
	1.5	Pb								746			
		As								67			
		Zn								803			
		Cd								< LOD			
Mid depth	5	Pb				47							
		As				< LOD							
		Zn				88							
		Cd				< LOD							
	7	Pb								111		27	
		As								< LOD		< LOD	
		Zn								163		149	
		Cd								< LOD		< LOD	
Deep	8	Pb						238					
		As						< LOD					
		Zn						414					
		Cd						< LOD					
	10	Pb						48	42		110.93	<	
		As						< LOD	< LOD		< LOD		
		Zn						165	164		167		
		Cd						< LOD	< LOD		< LOD		

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Transect 5

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West		East												
			U 2+50	F 1+25	F 1+25	F 3+75	F 6+25	F 8+75	F 11+25	U 13+75	F 16+25	U 18+75	F 21+25	F 23+75	F 26+25	U 30+00	U 33+75
Shallow	0.5	Pb	60	8,925	7,168	9,682	5,963		1,670		534	104	1,285	2,191	3,009	1,386	1,514
		As	< LOD	537	303	614	498		71		< LOD	< LOD	< LOD	77	120	93	71
		Zn	219	13,953	24,508	37,952	20,119		2,878		1,025	237	1,647	1,962	2,274	1,893	1,692
		Cd	< LOD	65	< LOD	< LOD	62		< LOD		< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
	1	Pb									910						
		As									< LOD						
		Zn									1,019						
		Cd									< LOD						
Mid depth	3.5	Pb						41,416									
		As						2,032									
		Zn						57,440									
		Cd						97									
	4	Pb										34					
		As										< LOD					
		Zn										144					
		Cd										< LOD					
	7	Pb							70		41						
		As							< LOD		< LOD						
		Zn							212		151						
		Cd							< LOD		< LOD						
Deep	9	Pb		33													
		As		56													
		Zn		145													
		Cd		< LOD													
	10	Pb		35					126		34		37				
		As		< LOD					22		< LOD		< LOD				
		Zn		172					290		75		144				
		Cd		< LOD					< LOD		< LOD		< LOD				

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Transect 6

Depth Range	Sample Depth ⁽¹⁾	Location Water Levels ⁽²⁾ -->	West					East						
			U 13+75	U 8+75	F 6+25	F 3+75	F 1+25	F 1+25	F 3+75	F 6+25	U 11+25	U 13+50	U 16+25	U 21+25
					WL 3.4		WL 4.4		WL 8.1			WL 0.0		
Shallow	0.5	Pb	51	31		61,822		7,311	310	170	2,551	360		
		As	< LOD	17		3,696		438	< LOD	25	148	< LOD		
		Zn	182	162		70,355		28,532	529	373	2,319	597		
		Cd	< LOD	< LOD		< LOD		65	< LOD	< LOD	< LOD	< LOD		
	1	Pb					6,615						55	64
		As					385						< LOD	< LOD
		Zn					13,371						191	195
		Cd					< LOD						< LOD	< LOD
	1.5	Pb			6,701									
		As			197									
		Zn			12,657									
		Cd			< LOD									
Mid depth	4	Pb			24,477				39			67		
		As			1,097				< LOD			27		
		Zn			30,217					117			136	
		Cd			89				< LOD				< LOD	
	6	Pb					61,723							
		As					3,632							
		Zn					169,890							
		Cd					178							
Deep	9	Pb			108									
		As			30									
		Zn			270									
		Cd			< LOD									
	10	Pb			448		803			36			39	
		As			< LOD		78			< LOD			< LOD	
		Zn			575		1,164			146			184	
		Cd			< LOD		< LOD			< LOD			< LOD	

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